

ABSTRACT

A system may perform a first operation within a file system in which directories and files are organized as nodes in a namespace tree. The system may associate a read-write lock with each of the nodes in the namespace tree. The system may acquire a first lock on a name of one or more directories involved in the first operation, acquire a second lock on an entire pathname involved in the first operation, determine whether the first lock or the second lock conflicts with third locks acquired by a second operation, and perform the first operation when the first lock or the second lock does not conflict with the third locks. The first, second, and third locks may include read-write locks.